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Atty. Dkt. No. 023971-0422

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A steering apparatus for controlling left and right drive wheels of a vehicle, comprising:

a driving force control section to control left and right driving forces of the left and right drive wheels individually in accordance with a running condition of the vehicle;

a power assistance device to add a steering assistance force to a driver's steering input force input to a steering input device;

a steering mechanism to link the left and right drive wheels with the steering input device so that the left and right drive wheels are turned in accordance with the driver's steering input force and the steering assistance force added thereto;

a steering reaction force calculating section to calculate a steering reaction force acting on the steering input device in accordance with a difference between the left and right driving forces; and

a steering force correcting section to correct the steering assistance force so as to compensate the steering reaction force by varying the steering assistance force in accordance with a turning direction of the vehicle.

2. (Previously Presented) A steering apparatus for controlling left and right drive wheels of a vehicle, comprising:

a driving force control section to control left and right driving forces of the left and right drive wheels individually in accordance with a running condition of the vehicle;

a power assistance device to add a steering assistance force to a driver's steering input force input to a steering input device;

a steering mechanism to link the left and right drive wheels with the steering input device so that the left and right drive wheels are turned in accordance with the driver's steering input force and the steering assistance force added thereto;

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a steering reaction force calculating section to calculate a steering reaction force acting on the steering input device in accordance with a difference between the left and right driving forces; and

a steering force correcting section to correct the steering assistance force so as to compensate the steering reaction force,

wherein the steering force correcting section decreases the steering assistance force when the driving force control section increases the driving force of an outer drive wheel of the drive wheels outside of a turning radius of the vehicle.

3. (Previously Presented) A steering apparatus for controlling left and right drive wheels of a vehicle, comprising:

a driving force control section to control left and right driving forces of the left and right drive wheels individually in accordance with a running condition of the vehicle;

a power assistance device to add a steering assistance force to a driver's steering input force input to a steering input device;

a steering mechanism to link the left and right drive wheels with the steering input device so that the left and right drive wheels are turned in accordance with the driver's steering input force and the steering assistance force added thereto;

a steering reaction force calculating section to calculate a steering reaction force acting on the steering input device in accordance with a difference between the left and right driving forces; and

a steering force correcting section to correct the steering assistance force so as to compensate the steering reaction force,

wherein the steering force correcting section increases the steering assistance force when the driving force control section decreases the driving force of an outer drive wheel of the drive wheels outside of a turning radius of the vehicle.

4. (Previously Presented) A steering apparatus for controlling left and right drive wheels of a vehicle, comprising:

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a driving force control section to control left and right driving forces of the left and right drive wheels individually in accordance with a running condition of the vehicle;

a power assistance device to add a steering assistance force to a driver's steering input force input to a steering input device;

a steering mechanism to link the left and right drive wheels with the steering input device so that the left and right drive wheels are turned in accordance with the driver's steering input force and the steering assistance force added thereto;

a steering reaction force calculating section to calculate a steering reaction force acting on the steering input device in accordance with a difference between the left and right driving forces; and

a steering force correcting section to correct the steering assistance force so as to compensate the steering reaction force,

wherein the steering force correcting section increases the steering assistance force when the driving force control section increases the driving force of an inner drive wheel of the drive wheels inside of a turning radius of the vehicle.

5. (Previously Presented) A steering apparatus for controlling left and right drive wheels of a vehicle, comprising:

a driving force control section to control left and right driving forces of the left and right drive wheels individually in accordance with a running condition of the vehicle;

a power assistance device to add a steering assistance force to a driver's steering input force input to a steering input device;

a steering mechanism to link the left and right drive wheels with the steering input device so that the left and right drive wheels are turned in accordance with the driver's steering input force and the steering assistance force added thereto;

a steering reaction force calculating section to calculate a steering reaction force acting on the steering input device in accordance with a difference between the left and right driving forces; and

a steering force correcting section to correct the steering assistance force so as to compensate the steering reaction force,

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wherein the steering force correcting section decreases the steering assistance force when the driving force control section decreases the driving force of an inner drive wheel of the drive wheels inside of a turning radius of the vehicle.

6. (Original) The steering apparatus as claimed in Claim 1, wherein the steering force correcting section corrects a magnitude of the steering assistance force so as to compensate the steering reaction force when the driving force control section corrects a magnitude of the driving force of one of the left and right drive wheels when the vehicle is running substantially straight.

7. (Original) The steering apparatus as claimed in Claim 1, wherein the steering force correcting section corrects a magnitude of the steering assistance force so as to compensate the steering reaction force when the driving force control section corrects a magnitude of the driving force of at least one of the left and right drive wheels in accordance with a running environment of the vehicle.

8. (Previously Presented) A steering process for controlling left and right steerable drive wheels of a vehicle, comprising:

examining a difference between left and right driving forces individually controlled for the left and right drive wheels turned in accordance with a driver's steering input force input to a steering input device and a steering assistance force added to the driver's steering input force; and

varying the steering assistance force so as to compensate a steering reaction force acting on the steering input device in accordance with the difference between the left and right driving forces when the driving force of one of an outer drive wheel of the drive wheels outside of a turning radius of the vehicle, and an inner drive wheel of the drive wheels inside of the turning radius of the vehicle is varied.

9. (Previously Presented) A steering apparatus for controlling left and right steerable drive wheels of a vehicle, comprising:

means for controlling left and right driving forces of the left and right drive wheels individually in accordance with a running condition of the vehicle;

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means for calculating a steering reaction force caused in a steering input device by a left and right driving force difference between the left and right driving forces; and
means for varying a steering assistance force so as to compensate the steering reaction force.

10. (Previously Presented) The steering apparatus as claimed in Claim 1, wherein the driving force control section includes a left wheel motor to drive the left drive wheel to drive the vehicle, and a right wheel motor to drive the right drive wheel to drive the vehicle.

11. (Previously Presented) The steering apparatus as claimed in Claim 9, wherein the means for controlling left and right driving forces includes left wheel drive means for driving the left drive wheel to drive the vehicle, and right wheel drive means for driving the right drive wheel to drive the vehicle.

12. (Currently Amended) The steering apparatus as claimed in Claim 1, wherein the steering apparatus is adapted to ~~modify steering force in a manner that makes~~ increases a first steering operation force heavier as compared to normal beyond the steering operation force that would be present without correction of the steering assistance force when the steering reaction force acts in a clockwise direction corresponding to a right steering direction, and wherein the steering apparatus is adapted to ~~modify steering force in a manner that makes decreases a second steering operation force heavier as compared to normal below the steering operation force that would be present without correction of the steering assistance force~~ when the steering reaction force acts in a counterclockwise direction corresponding to a left steering direction.

13. (Currently Amended) The steering process as claimed in Claim 8, wherein the steering apparatus is adapted to ~~modify steering force in a manner that makes~~ increases a first steering operation force heavier as compared to normal beyond the steering operation force that would be present without correction of the steering assistance force when the steering reaction force acts in a clockwise direction corresponding to a right steering direction, and wherein the steering apparatus is adapted to ~~modify steering force in a manner that makes decreases a second steering operation force heavier as compared to~~

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normal below the steering operation force that would be present without varying the steering assistance force when the steering reaction force acts in a counterclockwise direction corresponding to a left steering direction.

14. (Currently Amended) The steering apparatus as claimed in Claim 9, wherein the steering apparatus is adapted to ~~modify steering force in a manner that makes~~ increases a first steering operation force heavier as compared to normal beyond the steering operation force that would be present without varying the steering assistance force when the steering reaction force acts in a clockwise direction corresponding to a right steering direction, and wherein the steering apparatus is adapted to ~~modify steering force in a manner that makes decreases a second steering operation force heavier as compared to normal below the steering operation force that would be present without correction of the steering assistance force~~ when the steering reaction force acts in a counterclockwise direction corresponding to a left steering direction.